

Let us assume the curvature to have been produced by making the building correspond at every point in its length with the sea horizon, when viewed from some certain fixed point opposite its centre. Call this the point of sight. Then the curvature will become greater as the height of the building above the sea-level increases, or as the distance of the point of sight from the building diminishes. It is evident that when the point of sight is brought close up to the face line of the building, the curve will become two straight lines meeting at an obtuse angle; and the elevation of this point above the straight line joining the extremities of the building is the limit of greatest curvature.

This limit can always be ascertained when the height of the building above the sea-level and its length are known, for it depends upon the dip of the horizon. From this limit, and from the actual curvature, the distance of the point of sight is obtained; that is to say, the distance of a point from which the building would appear exactly to correspond with the sea horizon at its centre and its two ends. If the levels of the building were actually taken from the sea horizon, the two will coincide throughout, if they were not, the chance of their doing so is very slight indeed.

It is unnecessary here to enter on the method of obtaining the dip of the horizon for any height. All nautical works give tables of the dip for different heights, corrected for refraction and ready for use; nor will it be disputed that the depression of any point below the level of the point of sight is exactly in proportion to its distance from it.



Let  $a'$  = half the length of building;  $x'$  = distance of point of sight from building (and suppose it opposite the centre);  $y'$  = distance from point of sight to ends of building. Let  $a$ ,  $x$ , and  $y$  = the depressions corresponding to these lengths respectively; then  $a:x::y::a':x':y'$ . Now, since the triangles are right angled,  $y^2 - x^2 = a^2$  substituting the other proportionals

$y^2 - x^2 = a^2$ , let  $b$  = actual curvature, equal difference of  $y$  and  $x$ .

$y - x = b$  divide the preceding by this.

$y + x = \frac{a^2}{b}$  subtract the former

$$2x = \frac{a^2}{b} - b \therefore x = \frac{a^2 - b^2}{2b}$$

This is the depression of the building at its centre, and this subtracted from the greater depressions of every other point will give the curvature at these parts.

$x'$  is now easily obtained from the equation  $x' = \frac{a'x}{a}$ . Having now obtained the distance

of the point of sight, we can easily find the length of the line from it to any given point,  $m$ , in the building. Let  $p'$  = length, then  $p$  = depression, and  $x - p$  = curvature at  $m$ , which being compared with the actual curvature, will show whether the real and the supposed curvature be identical.

Let us take an example. A building, 100 feet long, is placed at an elevation of 140 feet above the sea; actual curvature, at 15 feet from centre = '0064; at 25 feet, '0154; at the ends, '0433 =  $b$ .

In this case the dip of the horizon is  $11' 39''$ , which gives in 50 feet length '1696 depression =  $a$ . Then,

$$x = \frac{1696^2 - 0433^2}{2 \times 0433} = 3103 = \text{depression on length } x'.$$

$$x' = \frac{50 \times 3103}{1696} = 916 = \text{length of point of sight from building.}$$

Now, let  $m$  and  $n$  = 15 and 25, the distances of the two intermediate points from the centre, and  $p'$  and  $q'$  their distances from the point of sight, and  $p$  and  $q$  the depressions proportional to these lengths:—

$$p' = \sqrt{x'^2 + m^2} = \sqrt{916^2 + 15^2} = 9282.$$

$$p = \frac{x p'}{x'} = \frac{3103 \times 9282}{916} = 3146.$$

$$p - x = \text{curvature} = 3146 - 3104 = 0041.$$

In this same way we find that  $q = 3218$ , and, consequently,  $q - x = 0113$ ; and comparing these with the actual measurements, we find that the one is about one-third less, and the other one-fourth less; showing clearly enough that the curve could not have been formed from the sea horizon. In fact, the curve given would correspond with it if the height be supposed 20 instead of 140 feet.

R. R.

#### FOREIGN ARCHITECTURAL AND ARTISTICAL INTELLIGENCE.

*Paris.*—*Monumentation of France.*—It is stated that an extensive commission, composed of painters and sculptors, will be nominated. Its especial object will be to select and project for each of the principal towns of the republic, the subject for a statue, bust, picture, or portrait relative to the locality where it is to be exhibited, either in the Mairie or other place open to the people. The public exchequer would have to bear the half of the costs of these monuments, the other half to be paid by the department or the commune.

*The new Salle of the French Legislative Chambers.*—The former tribune of the speakers has disappeared, on which place the benches for the Government Commissioners will be erected. These benches, which will be placed before those of the president and the secretaries, will be opposite to the semicircular seats destined for the members of the Assembly. The former Chamber of Deputies could contain about 500 members. Its size has been reduced by the suppression of the last row of benches, and by enlarging the seats in the ratio of 3 to 2. The second row of the public tribunes, which is at a level with the circular colonnade at the rear part of the Salle, will be suppressed.

*France.*—*Arts Department of the Public Service.*—Besides the museums of Paris, France possesses such in most of its provincial capitals, Lyons, Marseilles, Avignon, &c.—some of them rich in art-works of the first order. According to a decree of the Minister of the Interior, dated the 22nd January last, the "general direction of the national museums" forms henceforth a distinct department in that ministry of state. It comprises, besides the public collection of the Louvre, Versailles, Trianon, and the Luxembourg, the superior direction of the provincial museums, with a view to "the ameliorations they may be susceptible of, and the encouragements which may be afforded them." The Director-General of the National Museums is entrusted with the service of the annual exhibition of painting, sculpture, and architecture, and the reports to the secretary for home affairs on the distribution of medals and other national rewards to be bestowed on eminent artists. According to the announcement of the Director-General of the National Museums, the next exhibition of art-works at Paris, will take place on the 1st of April, and they are to be sent to the Palais Royal until the 1st of March, at 6 p.m.

#### THE INCORPORATION OF ARCHITECTS.

##### EFFECT OF BUILDING ACTS.

It would probably be found that, by imposing upon the architect of any building a definite responsibility for its stability and sound construction, the various building Acts throughout the country might be entirely repealed; the proprietor being required to deposit in some given public office a certificate from a fellow, or even licentiate, of the College of Architects. In case of any question arising relative to the stability of the work, this certificate would be evidence to fix the responsibility upon the grantor. In the present day, it must be confessed that a great deal of professional ingenuity is exercised for the purpose of evading the restrictions of the Building Acts: to so great an extent is this prevalent, that I have heard one of the heads of the profession assert that there is more bad building in the towns possessing Building Acts, and full staffs of surveyors, than in those where the architect and builder are left to their own discretion.

Building Acts necessarily assume a certain mode of construction as a standard in specifying thicknesses of walls and scantlings of timber: vary the mode of construction either in the nature or the arrangement of the material, and the provisions that were reasonable become oppressive.

To relieve the profession from the anomalous fetters at present imposed upon it, would be very gainful both to the public and to architects. It may safely be affirmed that had there been any Building Act for the Menai Straits, no tubular bridge would have been constructed; and it is difficult to assign the limits to the hindrance occasioned to the progress of good architecture by those now in existence. It is desirable that the public should have security for the stability of the different erections which are springing up in all directions. The occasional accidents which happen declare loudly that the existing legal restrictions do not yield that security, though they greatly fetter the architect; but give the architect a legal position, recognise the profession in law, and make its members responsible, and the public have the security required.

That the position accorded to architects in the opinion of the general public would be improved by incorporation, I think the following incident will attest:—

I had been treated by a committee in a manner which did not at all accord with my ideas of due courtesy; and in a remonstrance to the chairman, observed, "That the course pursued towards me is such as would not be thought of were an attorney or a physician in the case; and I do not see why an architect is not to be treated with just as much courtesy as is shown to the members of any other profession." The chairman rejoined, "I quite agree with you that architects should be placed on the same footing as attorneys and physicians, but not until they go through the same course of education and pass an examination. . . . I might start as an architect to-morrow morning, but I certainly could not start as an attorney or physician."

This will indicate the influence that a legal status to the profession would exercise over the minds of coarse and vulgar-minded men.

J. R.

THE want of union among the professors of our art, and the consequent evils, have long been felt.

At the meeting convened last autumn by the Architectural Association, on the subject of competitions, I proposed (by letter), the formation of branch associations in every town, which should be in communication with the central one in London, by sending delegates to its important meetings, and by communication through the secretaries on any important matter. This would in some measure supply the place of the corporate body, which distinguishes the legal and medical professions from the architectural and engineering.

I have been waiting for the intelligence of some practical result from the meeting on the competition question above referred to, but though regretting the absence of such result, am not surprised; for, in order to settle this or any other matter of professional rule or practice, you must get the whole body of practitioners interested in the matter; and in order to feel adequate interest in it, all must have some part in the discussion of arrangement. As you cannot expect all, even supposing them to have heard of the meeting, to be present or even to communicate their opinions in writing, the best way of effecting this would be to form branch associations, in whose meetings every one would be able to state his views, and the opinion of the majority could be communicated to the central meeting.

J. P. P.

*NORFOLK AND NORWICH ARCHAEOLOGICAL SOCIETY.*—The annual meeting of this society was held on Thursday in last week, Sir J. Boileau, the president, in the chair, when the report was read and other business transacted. A collection of antiquities was exhibited.